



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202

REPORT
NO. 92-032

January 3, 1992

MEMORANDUM FOR THE COMMANDANT OF THE MARINE CORPS

SUBJECT: Final Quick-Reaction Report on the Audit of Wastewater Treatment Plants at Marine Corps Air Ground Combat Center, Twentynine Palms, CA (Project No. 1CG-0042.01)

Introduction

On April 10, 1991, we announced an audit of DoD Wastewater Treatment Plants (Project No. 1CG-0042). The objectives of the audit included evaluating DoD Components' plans to replace, expand, or upgrade wastewater treatment plants.

During our audit, we found that the Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms, California, did not have an effective planning process for replacing, expanding or upgrading its wastewater treatment facilities. The MCAGCC planning process was not effective because management had not established policies and procedures to compare and update wastewater treatment options and to meet program objectives. As a result, management could pursue duplicate or uneconomic projects. MCAGCC was considering two potentially overlapping wastewater treatment system projects that cost about \$15.6 million rather than determining the best overall solution.

Background

The Federal Water Pollution Control Act of 1972 (known as the Clean Water Act) and individual state laws require that wastewater be treated and discharged according to standards. The treatment and discharge standards are established for systems, individually, by means of a permit issued under the terms of the National Pollutants Discharge Elimination System (NPDES) Program, a program established by the Clean Water Act.

To meet the terms of an NPDES permit, a wastewater treatment system must have the technology, capacity, and maintained capability to clean wastewater in accordance with the established standards. In recent years, NPDES permit standards have become more stringent while DoD wastewater treatment systems have become older. These aging DoD wastewater treatment systems must be replaced, expanded or upgraded in order for DoD to maintain or, in some cases, regain NPDES permit compliance.

The consequences of failing to meet NPDES permit standards can be costly. An installation that does not meet permit standards can be fined and forced to pursue interim "quick" fixes. Ideally, requirements to replace, expand, or upgrade wastewater treatment systems are identified, funded, and executed before a system can no longer meet NPDES permit standards. DoD policy states that installations will make every effort to maintain compliance, rather than regain it.

Discussion

At the time of our visit to MCAGCC, the installation management had identified 10 wastewater treatment system projects over the last five years. These projects, shown in Enclosure 2, were developed in response to system deficiencies as they occurred. There was no planning process to identify probable future system deficiencies caused by factors such as age, usage, or climactic conditions. Additionally, the projects were not compared to previously submitted wastewater treatment system projects, or to near-term wastewater treatment system requirements, to determine if duplication existed among projects.

One of the system deficiencies at MCAGCC was the inability to dispose of treated wastewater at an adequate rate. Two possible approaches were developed to remedy the problem: expand irrigation using treated wastewater at a cost of \$4.6 million (Project No. P-455) or replenish the drinking water reservoir using more extensively treated wastewater at a cost of \$11 million (Project No. P-511). Both of these remedies were alternatives considered in a 1986 Department of the Navy study that recommended expanding irrigation. The project to replenish the water reservoir received renewed attention as California's water crisis continued into 1991. While the two projects may not be mutually exclusive, they could significantly overlap. Evaluating and comparing the projects to establish a cost-effective remedy consistent with MCAGCC objectives could save as much as \$4.6 million, depending on the MCAGCC objectives. The cost of wastewater treatment system projects may be further reduced if two or more of the eight remaining projects can be consolidated (see Enclosure 2).

Recommendations

We recommend that the Commandant of the Marine Corps direct the Marine Corps Air Ground Combat Center to:

1. Accelerate the FY 1992 management study to determine if Project No. P-455 fits into the best overall solution for handling wastewater treatment and do not place Project No. P-455 on contract until the study is complete.
2. Consolidate wastewater treatment system projects to the extent possible.

Management Comments

A draft of this report was provided on October 29, 1991. We received comments from the Assistant Secretary of the Navy (Installations and Environment) on December 3, 1991. A complete text of the comments is provided in Enclosure 1.

The Navy nonconcurred with the finding and Recommendation 1. and stated that the current planning and processing procedures at MCAGCC are consistent with public policy, DoD environmental policy, and installation requirements.

The Navy also nonconcurred with Recommendation 2. and draft Recommendation 3. and stated that economic realities require interim measures to maintain environmental compliance and facilities support until long-term goals are accomplished. The Navy considered the Commandant of the Marine Corps' direction unnecessary because MCAGCC already reviews projects annually to determine the necessity and priority of each project. Further, the Navy nonconcurred with the potential benefits because Project No. P-511 was unprogrammed and unbudgeted, and if Project No. P-455 is not implemented at this time, more costly quick fixes would be required. The Navy also stated that MCAGCC intends to conduct a management study during FY 1992 to evaluate future water and wastewater requirements and options.

Audit Response

We considered comments from the Navy on Recommendation 1., as worded in the draft report, to be nonresponsive. The intent of the recommendation was to require management to review the current wastewater treatment projects to determine which projects are consistent with the MCAGCC objectives for handling wastewater. We believe that an in-house review is required to validate existing requirements, which may be drastically altered due to a wastewater study conducted in July 1991 by the Marine Corps. The study identified significant problems with the existing system and suggested that the plant may require major upgrades or replacement. Also, new wastewater system requirements may be needed to support a growth in population as a result of potential base closures and realignment activities. The FY 1992 management study should provide a comprehensive overview of the best overall solutions for handling wastewater. We believe it is prudent to not place Project No. P-455 on contract unless the management study shows it is part of the overall solution. Furthermore, it would seem that the best overall solution would place a priority on recharging the aquifer. Project No. P-455, in contrast, helps keep grass green in a desert region on areas such as parade grounds and golf courses. Therefore, we have revised Recommendation 1. and request that the Navy reconsider its position on the restated Recommendation 1. in response to this final report.

We also considered the comments to Recommendations 2. to be nonresponsive. The comments from the Navy stated that the draft report focused almost exclusively on the need to dispose of excess wastewater in order to remain in compliance with NPDES discharge permit requirements. The Navy also stated that the audit overlooked the water supply issues in the arid California region in which MCAGCC is located. To the contrary, the audit recognized the need to address the effluent capacity problem at MCAGCC. This is precisely why we believe that Project No. P-455, which creates additional additional irrigation areas, is not nearly as practical as an overall effort to reclaim appropriately processed wastewater into the aquifer. Accordingly, we questioned the selection of Project No. P-455 over Project No. P-511, or an improved version of the two projects combined. Project No. P-511 appears to provide the MCAGCC with a capability of disposing of excess wastewater and recharging the aquifer. The intent of the recommendation was not to question the needs, but to require management to focus on cost-effective ways to satisfy the overall short and long-range wastewater objectives. Specifically, we are requesting that management consider consolidating validated wastewater treatment system projects in order to achieve economy of scale and to evaluate and compare options for improvement to the overall wastewater system. The evaluation should consider both cost and benefits to be achieved. Therefore, we request that the Navy reconsider its position when responding to Recommendations 2. in this final report.

Since the Navy pointed out that the MCAGCC already performs an annual review of projects, we have withdrawn Recommendation 3.

Request for Comments

DoD Directive 7650.3 requires that all audit recommendations be resolved promptly. Therefore, we request that the Navy provide final comments on the unresolved recommendations and potential benefits by February 3, 1992. As required by DoD Directive 7650.3, the comments must indicate concurrence or nonconcurrence in the finding and each recommendation addressed to you. If you concur, describe the corrective actions taken or planned, the completion dates for actions already taken, and the estimated completion dates for completion of planned actions. If you nonconcur, state your specific reasons for each nonconcurrence. If appropriate, you may propose alternative methods for accomplishing desired improvements.

If you nonconcur with the estimated monetary benefits (Enclosure 3) or any part thereof, you must state the amount you nonconcur with and the basis for your nonconcurrence. Recommendations and potential monetary benefits are subject to resolution in accordance with DoD Directive 7650.3 in the event of nonconcurrence or failure to comment.

The courtesies extended to the audit staff are appreciated. If you desire to discuss this final report, please contact Ms. Judith I. Karas, Project Manager, at (703) 693-0594 (DSN 223-0594) or Mr. Wayne K. Million, Program Director, at (703) 614-6281 (DSN 224-6281). Copies of this final report will be distributed to the activities listed in Enclosure 4.

A handwritten signature in black ink, reading "Robert J. Lieberman". The signature is written in a cursive style with a large, stylized "R" and "L".

Robert J. Lieberman
Assistant Auditor General
for Auditing

Enclosures

cc:

Deputy Assistant Secretary of Defense (Environment)



DEPARTMENT OF THE NAVY

OFFICE OF THE ASSISTANT SECRETARY
(INSTALLATIONS AND ENVIRONMENT)
WASHINGTON, D.C. 20360-5000

3 DEC 1991

MEMORANDUM FOR THE DEPARTMENT OF DEFENSE INSPECTOR GENERAL

Subj: DRAFT QUICK-REACTION REPORT ON THE AUDIT OF WASTEWATER
TREATMENT PLANTS AT MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CA (PROJECT NO. ICG-0042.01)

Ref: (a) Director CMD, DODIG ltr dtd October 29, 1991

Encl: (1) DON Comments

Reference (a) transmitted the subject draft report for
review and requested comments.

The Department of the Navy has reviewed the report and
generally disagrees with the report finding, recommendations, and
alleged monetary benefits. Detailed comments are provided at
enclosure (1).

BEN ROSE
Principal Deputy
Assistant Secretary of the Navy
(Installations and Environment)

Copy to:
NAVINGEN
NAVCOMPT (NCB-53)
DASD(E)
CMC

**DON COMMENTS ON THE
DODIG DRAFT QUICK REACTION REPORT ON THE AUDIT OF
WASTEWATER TREATMENT PLANTS AT
MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CA
Project #1CG-0042.01**

1. The Department of the Navy generally does not concur in the report findings and recommendations.
2. The draft audit report states that Marine Corps Air Ground Combat Center (MCAGCC) "did not have an effective planning process for replacing, expanding, or upgrading its wastewater treatment facilities" and that "management had not established policies and procedures to compare and update wastewater treatment options and to meet program objectives."
3. The DON contends that the draft audit report does not accurately reflect the efforts of MCAGCC to comply with pertinent environmental regulations, Marine Corps policies, and future MCAGCC facilities requirements.
4. The audit report focuses almost exclusively on the need to dispose of excess wastewater in order to remain in compliance with National Pollutant Discharge Elimination System (NPDES) discharge permit requirements. However, it overlooks the related water supply issues in the arid California region in which MCAGCC is situated. With the growth in MCAGCC's population beyond the cited 1986 Navy study, both problems will become exacerbated: groundwater will be withdrawn faster from the aquifer, and more wastewater will be generated.
5. The audit report centers around two projects which were developed as a result of the 1986 Navy study.
 - a. The irrigation project, Military Construction Project P-455, has been programmed and approved for FY 1993. It was designed to support the installation's sewage disposal requirements and meet NPDES permit requirements when the MCAGCC population was projected to be 11,000.
 - b. The aquifer recharge project, P-511, was subsequently developed primarily to recharge the aquifer, as opposed to disposing of excess wastewater, and to meet future population growth. This project is currently unprogrammed and unbudgeted.
6. Project P-511 will be re-examined because of the findings of a 1989 U.S. Geological Survey Report (89-4099) and a 1991 CMC-sponsored wastewater evaluation report. Both reports indicate the need to prevent drawdown of the aquifer beyond economically recoverable levels. Excessive drawdown of the aquifer would force closure of MCAGCC.
7. MCAGCC intends to conduct a management study during FY 1992 to

examine future water and wastewater requirements and options. This study will address the long term requirements, such as the need for P-511.

8. We do not concur with the Summary of Potential Monetary and Other Benefits found in enclosure (2) of the draft audit report. With regard to the recommendations provided in the report, the following comments are provided:

a. Recommendation 1 - Nonconcur. Commandant of the Marine Corps direction is unnecessary. Current planning and processing procedures at MCAGCC are consistent with public policy, DOD environmental policy, and installation requirements.

b. Recommendation 2 - Nonconcur. Commandant of the Marine Corps direction is unnecessary. Economic realities require interim measures to maintain environmental compliance and facilities support until long term goals are accomplished. The savings stated are for a single project (P-511) which is unprogrammed and unbudgeted. If this project were not introduced at this time, more costly quick fixes would be required which would have an undeterminable adverse effect on operation and maintenance funds in the future.

c. Recommendation 3 - Nonconcur. Commandant of the Marine Corps direction is unnecessary. MCAGCC reviews all projects annually for determining their continuing necessity and priority.

SCHEDULE OF WASTEWATER IMPROVEMENT PROJECTS

<u>Project Description</u>	<u>Estimated Cost</u>
Expand treated wastewater irrigation system (Project No. P-455)	\$ 4,600,000
Build system to replenish water reservoirs (Project No. P-511)	11,000,000
Increase size of wastewater pipeline (Project No. TP-614)	200,000
Analyze/upgrade sewer line	100,000
Install aerators in sewage plant	66,000
Install aerators in ponds A and B	90,000
Repair treated wastewater (nonpotable) system	180,000
Replace lift stations pumps and motors	56,594
Repair culverts at Mainside	1,000,000
Construct fence around sewage ponds	<u>147,000</u>
Total	<u>\$17,439,594</u>

SUMMARY OF POTENTIAL BENEFITS
RESULTING FROM AUDIT

<u>Recommendation Reference</u>	<u>Description of Benefit</u>	<u>Amount and/or Type of Benefit</u>
1.	Program results. Wastewater treatment system programs will be consistent with public policy, DoD environmental policy, and installation requirements.	Nonmonetary
2.	Economy and efficiency. Reduce the cost of replacing, expanding, or upgrading wastewater treatment systems.	Funds put to better use of up to \$4.6 million in Military Construction Funds. Undeterminable amount of Operation and Maintenance funds.

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